Amendments to the Drawings:

Formal drawings are submitted herewith, which incorporate the changes required by the Examiner. Approval by the Examiner is respectfully requested.

Attachment: Replacement Figures 1 and 2

REMARKS

Claims 14, 16, 18-20, 22-35 and 49 are rejected. New claims 54-65 have been added. Claims 14, 16, 18-20, 22-35, 49, and 54-65 are presently pending in the application. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

Original claims 37-46 and 50-51, previously canceled to expedite issuance as a result of allowance of claims, which has since been withdrawn by the Examiner, are represented as new claims 54 - 65.

Rejection Of Claims 14, 16, 18-20, 22-35 and 49 Under 35 U.S.C. §103(a):

The Examiner has rejected Claims 14, 16, 18-20, 22-35 and 49 under 35 U.S.C. 103(a) as being unpatentable over Fisher (US 6,579,927) and Acquarulo, Jr. et al (US 6,833,392), as Fisher teaches a block copolymer intercalated clay and its use in a matrix polymer, one of block copolymer could be polyethylene oxide (polyether)-b-polyamide, Acquarulo, Jr. et al teach the use of such block copolymer (PEBAX) with clay in examples, Fisher teaches various matrix polymer including polyolefins and polyesters, and Fisher also teaches article obtained by an extrusion meeting the instant extruded base, making it obvious to one skilled in the art at the time of invention to utilize polyethylene oxide (polyether)-b-polyamide taught by Acquarulo, Jr. et al in intercalating clay and further to use said modified clay with polyolefins and polyesters in Fisher since Fisher teaches such modification and choosing species such as block copolymer and matrix resins from disclosed species is considered a routine practice in the art.

Fischer discloses a nanocomposite material of clay in a polymeric matrix, including a block copolymer or a graft copolymer, which has an (A)-block compatible with the clay and a (B)-block compatible with the polymeric matrix. Fischer fails to disclose the use of the nanocomposite material in an extruded imaging support. Fischer also fails to disclose the use of clay, intercalated with a polyether block polyamide copolymer, which is dispersed in a matrix polymer of polyolefin or polyester.

Acquarulo discloses a polymer composite comprising a polymer matrix having dispersed therein, a nano clay in combination with a crosslinking promotor. (Abstract) Acquarulo teaches that, without some additional treatment, the matrix polymer will not infiltrate into the space between the layers of the

additive sufficiently and the layers of the layered inorganic material will not be sufficiently uniformly dispersed in the polymer. (col. 1, lines 23-24) Acquarulo discloses a number of techniques for dispersing individual layers, e.g., platelets, of the layered inorganic material, throughout the polymer, including exchange with organic cations (e.g., alkylammonium ions) to intercalate the individual layers of the multilayered materials prior to subsequently mixing the layered material (conventionally referred to as "nanofillers") with a monomer and/or oligomer of the polymer (col. 1, lines 30-40), dispersing an intercalated layered, particulate material having reactive organosilane compounds in a thermoplastic polymer or vulcanizable rubber (col. 1, lines 44-48), and surface modification of nano clay fillers (col. 1, lines 58-64). Acquarulo teaches that Montmorillonite nano clays have a plate like structure and are hydrophilic, making them not compatible with most polymers and should be chemically modified to make the clay surface more hydrophobic. (col. 2, line 65 col. 3, line 1) The most widely used surface treatments are ammonium cations, which are exchanged for existing cations already on the surface of the clay followed by incorporation of the treated clayed into the polymer matrix. (col. 3, lines 1-5) Acquarulo fails to mention a clay intercalated with polyether block polyamide copolymer. Acquarulo also fails to mention a clay intercalated with polyether block polyamide copolymer and dispersed in a matrix polymer of polyolefin or polyester.

The present invention relates to an extruded imaging element comprising a support of intercalated clay intercalated with a polyether block polyamide copolymer in a matrix polymer of polyolefin or polyester.

To establish a prima facia case of obviousness requires, first, there must be some suggestion or motivation, either in the reference itself, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

Fischer teaches nanocomposite materials comprising block copolymer, clay and matrix copolymer. The block copolymer of FISCHER has

hydrophilic block (A) compatible with the clay component and block (B) compatible with the matrix resin for use in packaging and construction materials. Fischer fails to mention the use of intercalated clay, intercalated with a polyether block polyamide copolymer, for use as an extruded base or support for an imaging element. Fischer also fails to disclose the use of clay, intercalated with a polyether block polyamide copolymer, which is dispersed in a matrix polymer of polyolefin or polyester. In addition, Fischer teaches in col.3, lines 61-66 that "*The structural units (B) are compatible with the polymeric matrix. By this is meant that these units in themselves, i.e. not in the copolymeric form with the structural units (A), are excellently mixable with the material of the polymeric matrix. It is also possible that the nature of the structural units (B) is the same as the nature of the polymeric matrix.*" The Examiner also notes that the block copolymer of FISHER has block (A) compatible with the clay component and block (B) compatible with the matrix resin. However, the present claims are directed to clay, intercalated with a polyether block polyamide copolymer and dispersed in a matrix polymer of polyolefin or polyester. Polyamide and polyether, the components of the presently claimed block copolymer, are neither "*excellently mixable*" nor of the " *same as the nature of the polymeric matrix*", but are considered immiscible with the presently claimed matrix binder. This fact is known in the art. See Attachment A, Polymer Alloys and Blends: Thermodynamics and Rheology, Leszak A, Ultracki, Hanser Publishers, Munich Vienna New York, 1990, pgs. 172, 207, and 213. See also Attachment B, Analysis of the morphology of polymer blends using ultrasound, Claude Verdier and Monique Piau 1996, J. Phys. D: Appl. Phys. 29, 1454-1461. Therefore, one would not use the teachings of Fischer to predict that the presently claimed block copolymer intercalant could be used with the presently claimed matrix polymer with which it is immiscible. As a result, Fischer fails to suggest modification of the reference to produce an extruded base for an imaging element comprising intercalated clay, intercalated with a polyether block polyamide copolymer as presently claimed. Acquarulo also fails to teach or suggest modification of the references, either alone or combined, as Acquarulo fails to teach intercalation of clay with polyether block polyamide copolymer – intercalated clay or intercalation of clay with polyether block polyamide copolymer – intercalated clay followed by dispersion in a matrix polymer of polyolefin or polyester.

Instead, at col. 3, lines 20-32, Acquarulo states that the block copolymer is used as a matrix polymer. ("In addition, the polymer matrix herein may be selected from any thermoplastic or thermoset type polymer resin host. A representative thermoplastic resin herein is a nylon resin, a nylon block copolymer, nylon block copolymers containing a polyamide block and an elastomeric block, engineering thermoplastic resins (e.g., polycarbonate, polyesters, polysulphones, polyketones, polyetherimides) as well as commodity type materials (polyethylene, polypropylene, polystyrene, poly(vinylchloride)) including thermoplastic elastomers. Representative thermoset materials include polyurethanes, epoxy polymers, etc."). At best, a combination of the references would produce a nanocomposite material comprising block copolymer, clay and matrix copolymer, the block copolymer having hydrophilic block (A) compatible with the clay component and block (B) compatible with the matrix resin PEBAX, not the presently claimed clay, intercalated with polyether block polyamide copolymer in a matrix polymer of polyolefin or polyester.

Fischer and Acquarulo also offers no expectation of the successful use of intercalated clay, intercalated with a polyether block polyamide copolymer, may be used as an extruded base or support for an imaging element when dispersed in a matrix polymer of polyolefin or polyester. There are a very large number of clays, block copolymers and matrix copolymers disclosed in Fischer and known to those skilled in the art. Although Fischer teaches that the nanocomposite composition of the prior art can be utilized to make molded articles of any kind, in the absence of any suggestion in Fischer to extrude an imaging base utilizing the claimed nanocomposite material, at most, it might only be "obvious to try" the combination of the present invention for extruding an imaging base. Acquarulo states that the block copolymer is used as a matrix polymer. There is no reasonable expectation of success found in the cited references to indicate that a copolymer with a B-block that is immiscible with the matrix polymer will be useful as taught in Fischer.

Finally, Fischer fails to make mention the use of clay, intercalated with a polyether block polyamide copolymer, in a matrix polymer of polyolefin or polyester for use as an imaging elements or production of an extruded imaging element as required by the present claims. Acquarulo fails to teach intercalation of clay with polyether block polyamide copolymer – intercalated clay or

intercalation of clay with polyether block polyamide copolymer – intercalated clay followed by dispersion in a matrix polymer of polyolefin or polyester, teaching instead that the block copolymer is used as a matrix polymer.

In addition, the present invention provides surprising results. As indicated by the prior art (Attachments A and B above), polyether block polyamide copolymer would be expected to be incompatible with a matrix polymer of polyolefin or polyester. However, the combination as claimed forms an imaging element support with acceptable and useful properties, including improved Young's modulus. Also, as noted on page 28, lines 16 – 22, the intercalated clay, intercalated with a polyether block polyamide copolymer, as presently claimed has antistatic properties, a particularly useful property in photographic supports. Applicants have previously included a sample of PEBAX in PET (Sample 1) and PEBAX in low density polyethylene (LDPE) (Sample 2). These samples more visually illustrate the immiscibility evidence previously submitted in Attachments A and B. Sample 3 is a comparison sample of PET only.

The Examiner indicates that Applicants assertion that Fisher teaches the use of compatible structural units A (excellently mixable) with a matrix resin, and thus teaches away from the use of polyolefins and polyesters since said polyolefins and polyesters are miscible with polyamide is not persuasive, as the meaning of compatible is very broad and indefinite and excellently mixable does not necessarily means miscible, and it can be mixed well due to similar meting point for example, and, thus, a blend of polyamide and said polyolefins or polyesters does not have to be miscible each other. The Applicants disagree. Firstly, the Applicants assertion, quoting Fischer, as previously stated is that "In addition, Fischer teaches in col.3, lines 61-66 that "*The structural units (B) are compatible with the polymeric matrix.*" Applicants do not make the assertion stated by the Examiner that <u>structural unit A</u> is excellently mixable with a matrix resin. Secondly, it is also commonly known in the art that mixable, let alone excellently mixable, and miscible are synonymous. See Merriam-Webster Online Dictionary (miscible: capable of being mixed; specifically: capable of mixing in any ratio without separation of two phases. Etymology: Medieval Latin miscibilis, from Latin miscere "to mix"); see also Dictionary.com (mixable adj: (chemistry, physics) capable of mixing [syn: miscible] [ant: immiscible]); see also

Attachment G1, pg. 3 of 6, and Attachment G2, pg. 2 of 25. As can be seen from the previously submitted samples, PEBAX in PET (Sample 1) and PEBAX in low density polyethylene (LDPE) (Sample 2) from Response dated October 18, 2005, the sampled materials are not miscible or mixable, let alone excellently mixable.

The Examiner indicates that, although Applicant has provided several articles with respect to compatibilization (miscibility) of polyamide (PA66) and PET, polyamide (PA6) and polypropylene and amorphous polyester and polamide, the scope of said article is narrower than the instant invention since said polyolefines can be polyethylene and said polyester can be crystalline polymer. MPEP 2144.08 indicates that, when considering whether proffered evidence is commensurate in scope with the claimed invention, Office personnel should not require the applicant to show unexpected results over the entire range of properties possessed by a chemical compound or composition. See, e.g., In re Chupp, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987). Evidence that the compound or composition possesses superior and unexpected properties in one of a spectrum of common properties can be sufficient to rebut a prima facie case of obviousness, if a skilled artisan "could ascertain a trend in the exemplified data that would allow him to reasonably extend the probative value thereof." In re Clemens, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). Usually, a showing of unexpected results is sufficient to overcome a prima facie case of obviousness. See, e.g., In re Albrecht, 514 F.2d 1389, 1396, 185 USPQ 585, 590 (CCPA 1975). Applicants have provided two examples of surprising results, in addition to several published articles.

As discussed above, the Applicants request reconsideration of the rejection, believing that Fischer and Acquarulo, alone or in combination, fail to discuss or suggest the specific limitations of the present invention, fail to teach or suggest modification of the reference and fail to provide any likelihood of success. In light of the previously provided surprising results, the Applicants request that the Examiner reconsider and withdraw the rejection.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Respectfully submitted,

Lynne M. Blank

Attorney for Applicant(s)
Registration No. 42,334

Lynne M. Blank/ct
Rochester, NY 14650
Telephone: 585-477-7418
Facsimile: 585-477-1148

Enclosures: Replacement Figures 1 and 2
Copies of Formal Drawings

If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.